UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,520	09/26/2001	Makoto Mitani	1155-0226P	9596

2292 7590 11/25/2002

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER
LEE, RIP A

ART UNIT	PAPER NUMBER
1713	8

DATE MAILED: 11/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/937,520	Applicant(s) MITANI ET AL.	
	Examiner Rip A. Lee	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover she t with the correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 October 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) *7-25 and 35-44* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 26-34* is/are rejected.

7)☒ Claim(s) *28-32 and 34* is/are objected to.

8)☒ Claim(s) *1-44* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4 and 5* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

This office action follows an election filed on October 30, 2002.

Election/Restrictions

1. Applicant's election with traverse of Group I, species (1) in Paper No. 7 is acknowledged. Species (1) is directed toward an olefin polymer of at least one olefin selected from olefins of 2-20 carbon atoms. Claims readable on said species are claims 1-6 and 26-34.

2. Claims 7-25 and 35-38, drawn to a non-elected species, and claims 35 and 39-44, drawn to a non-elected invention will not be considered.

3. Applicant's election of Group I in Paper No. 7 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

4. The Applicants request to rejoin claim 35 upon allowance of the invention of group I is noted. As indicated previously, claim 35 relates to a process for preparing an olefin polymer different from those recited in claims 1-38 comprising a different process than those recited within the set of claims 1-38. Therefore, the restriction requirement is still deemed proper and is therefore made FINAL.

Claim Objections

5. Claim 28 (p. 290, line 22), 29 (p. 293, line 6 and p. 295, line 3), and 32 (p. 299, line 17) are objected to because of the following informalities: The claims recite "*n* is a number satisfying a valence of M." The claim language is awkward. First, it appears that M has more than one valence, and second, both *m* and *n* have to satisfy the valence of the metal, not just *n* alone. Appropriate correction is required.

6. Claim 31 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 30. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). There is no apparent difference between the two claims. Both relate to processes for preparing the polymer of claim 1, and both appear to describe the same transition metal complexes (II-a) and (II-b).

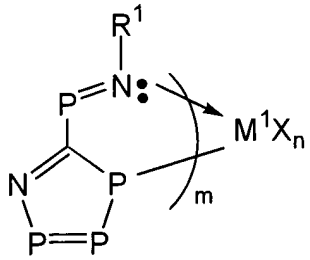
7. Claim 34 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 32. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). Claim 34 relates to a process of preparing olefin polymer comprising polymerizing a C_2-C_{20} olefin in the presence of transition metal compound of claim 32. Claim 32 is drawn to a process for polymerizing a C_2-C_{20} olefin in the presence of transition metal compound (cited in claim 34). Thus, claim 34 is redundant.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claim 29 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claims are drawn generically to compound (II-b) which contains a heterocyclic moiety wherein Q, S, T, and Y each represent N, P, or CR. Thus, claims are made to compounds such as the one whose structure is shown below, the authenticity of which is dubious, at best. As far as can be gleaned from the specification, there is no description which would enable one skilled in the art to make and use such a species in a catalyst for preparing the polymers of the present claims.



10. Claims 28 and 29 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the

invention. The claims are drawn to metal complexes containing group 11 metals. The specification is lacking in any description which enables one to use metal complexes containing Cu, Ag, and Au in a catalyst for preparing the polymers of the present claims. That the claimed polymers can be prepared from the putative compounds is most impressive since there is no precedent of olefin polymerization activity from these metals.

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 28 and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims recite an energetic value for the inventive compounds that were determined using a "density functional method." There are several DFT calculations, each with different methods of energy minimization. Unless every known DFT program yields the same electrostatic energy of 10 kJ/mole, the claim remains vague and indefinite without further elucidation of the calculation method.

13. Claims 28 and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. (*i*) The role of the "heteroatom which has no direct bond to the central metal M and is nearest to central metal M" in determining the distance of 3.0 Å unclear. Since the location of said heteroatom in general structure (I) can not be determined, the value is meaningless. Claim 29 appears to be more helpful since two structures (II-a) and (II-b) are

shown. However, since a heteroatom may appear in any of substituents R^1 to R^9, it is not clear which one is to be used in measuring the distance to the β-hydrogen. (*ii*) Furthermore, it is unclear how all variegated locations of heteroatom would yield the same 3.0 Å distance. (*iii*) Finally, the identity of said heteroatom is not disclosed in the claim. Therefore, the subject matter of the claim remains vague and indefinite.

14. Claims 28, 29, and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims recite the vague terms, "an oxygen-containing group, a sulfur-containing group, a nitrogen-containing group, a boron-containing group, an aluminum-containing group, a phosphorus-containing group, a halogen-containing group, a heterocyclic compound residue, a silicon-containing group, a germanium-containing group, and a tin-containing group" (pages 291, 292, 293, 294, 295, and 299). These descriptors include hundreds, if not thousands of different substituents, and without further qualification, the subject matter of the claims remains vague and indefinite.

15. Claims 28 and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims recite R^1 as having "heteroatoms" or "heteroatom-containing groups" (p. 292, lines 15-16; p.294, lines 11-12). These undefined terms are vague and encompass a vast range of substituents. Therefore, without further qualification, the subject matter of the claims remains indefinite.

16. Claims 30, 31, and 33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim recites the vague terms, "chlorine-containing group," "bromine- containing group," "iodine-containing group" (p. 296, lines 8 and 9, p. 297; lines 13-14; p. 300, lines 19-20), and "halogen-containing group" (p. 296, lines 1, 12, 14, and 16; p. 297, lines 5, 17, 20, and 23; p. 300, lines 12, 23, and 25; p. 301, line 3). Since the undefined terms encompass a wide range of substituent, without further qualification, the subject matter of the claims remains indefinite.

17. Claim 32 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim recites the vague terms, "heteroatom" and "heteroatom-containing group" (p. 298, line 22; p. 299, line 8), "heteroatom other than a fluorine atom" (p. 299, line 4) oxygen-containing group, nitrogen-containing group, sulfur-containing group (p. 299, lines 12-13), and halogen-containing group (p. 299, lines 14). Since the undefined encompass a wide range of substituent, without further qualification, the subject matter of the claims remains indefinite.

Claim Rejections - 35 USC § 102

18. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in-
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

20. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

21. Claims 1, 2, 3, 5, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 91/12285 to Turner *et al.*

Turner *et al.* discloses polypropylene polymer having M_n of 63,000 with a molecular weight distribution of 1.47 (Example 1, lines 18-20). Claim 9 of Turner *et al.* is drawn to an olefin polymer having M_w/Mn of 1-5 and M_w of 100-1,000,000. The olefin comprises segments selected from HDPE and isotactic 1-olefins such as syndiotactic polypropylene (claim 10). By definition, syndiotactic polypropylene has a racemic diad greater than the claimed value of 0.85. Compression molded products are described in the examples.

22. Claims 1 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by DE 40 30 399 to Schweier *et al.*

Schweier *et al.* teaches end-group terminated polymers and oligomers of propylene with 0-40 wt % of C_2-C_8 alkenes where the poly(oligo)mers have M_n in the range of 100-100,000 and M_w/Mn lies in the range of 1-3 (claim 1).

23. Claims 1-3 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,449,724 to Moffat *et al.*

Moffat *et al.* teaches a method for making polyethylene polymer having narrow molecular weight distribution of from about 1.00 to 2.5 and having a molecular weight of 5,000 to 1,000,000 or more (col. 5, lines 5-10). Specifically, the process is applied to high molecular weight polyethylene homopolymers or copolymers (col. 5, lines 11-13) where high molecular weight means the polymer has a molecular weight of 200,000 or more (col. 5, lines 20-22). Ethylene copolymers have a comonomer content that does not exceed 50 % (col. 5, line 49).

Examples of comonomers are propylene, butene, and hexane, *inter alia* (col. 5, line 34). An ethylene polymer prepared within the strictures of the invention of Moffat *et al.* would have properties which satisfy the claims of the present invention.

24. Claims 1, 2, and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. 2001/0041779 to Shin *et al.*

Shin *et al.* discloses a polyethylene homopolymer (Example 1) and ethylene copolymer (Example 2), both of which contain a terminal functional group and have a polydispersity index of 1.3. The molecular weights of the polymers are 2000 and 4200, respectively.

25. Claims 1, 4, and 27 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 5,942,461 to Brown *et al.*

Table 2 of Brown *et al.* reveals a polymer of 1-tridecene in which M_n is 7.87 X 10^4 and M_w/Mn is 1.48. Molded articles are prepared using polymers of the invention (Example 15). The reference does not disclose the melting point of the polymer, however, in view of the fact that the prior art material and the claimed material have essentially the same constitution, and especially in view of the fact that M_n and M_w/Mn lie squarely within the claimed range, a reasonable basis exists to believe that the polymer in Brown *et al.* possesses the claimed melting point. Since the PTO can not conduct experiments, the burden of proof is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02.

26. Claims 1, 2, 4, and 26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 4,717,755 to Doi *et al.*

The prior art of Doi *et al.* relates to essentially monodisperse propylene polymer which is chain terminated with a carbonyl group (claim 1). In particular, M_w/Mn is about 1.0-1.4 (claim 2) and M_n lies in the range of 500-1,000,000 (claim 3). The polymer may be polypropylene homopolymer (claim 4) or a copolymer of propylene and ethylene or an α-olefin having four or more carbon atoms (claim 5). The reference is silent with respect to the melting point of the polymer, however, in view of the fact that the prior art material and the claimed material have essentially the same constitution, and especially in view of the fact that M_n and M_w/Mn also lie squarely within the claimed range, a reasonable basis exists to believe that the polymer in Doi *et al.* possesses the claimed melting point. Since the PTO can not conduct experiments, the burden of proof is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02.

27. Claims 1, 2, and 4 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 5,475,067 to Schiffino.

Entry 6 in Table 1 of Schiffino shows a polyethylene having M_n of 21,177 and M_w/Mn of 1.94, thereby meeting the requirements of the above claims. The reference is silent with respect to the melting point of the polymer, however, in view of the fact that the prior art material and the claimed material have essentially the same constitution, and especially in view of the fact that M_n and M_w/Mn also satisfy the requirements of the claims, a reasonable basis exists to believe that the polymer in Doi *et al.* possesses the claimed melting point. Since the PTO can not

conduct experiments, the burden of proof is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02.

28. Claims 1 and 26-34 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over EP 874,005 to Fujita *et al.*

The prior art of Fujita *et al.* claims compounds that are essentially the same as those described in the present claims, particularly compound (III) of present claim 32 (see claims 1, 3, 5, 7, and 19 of Fujita *et al.*). For instance, the compound shown on page 73, having the *N*-2-chlorophenyl substituent and a *t*-butyl substitutent on the phenolate moiety, satisfies the structural requirements set forth in present claims 26- 30. All compounds shown on page 23, and in rows 2, 3, and 5 on page 24 also satisfy the structural features recited in present claims 26-30. In particular, the three entires in row 5, page 24 possess an *N*-aliphatic group containing a heteroatom or heteroatom containing group, as well as a hydrocarbon in the 2-posiiton of the phenolate moiety. As such, these compounds satisfy the structural features required by claims 26-34.

The reference is silent with respect to any parameter determined by DFT calculations for any of the compounds described therein. However, since the structures of the prior art and those claimed are essentially the same, a reasonable basis exists to expect that DFT calculations of the prior art compounds yield similar results. Since the PTO can not perform experiments, the burden is shifted to the Applicants to establish an unobviousness difference.

As further commentary, whereas calculations of this sort represent energy-minimized (*i.e.*, optimal), static geometries, they are merely man-made constructs, or best representations, of any real situation. Since all structures, in reality, are dynamic, a reasonable basis exists to believe that there exists some conformation in which the energetic parameters of the claims are met. Additionally, since the conformation of a structure can be manipulated using DFT programs, one is very likely to find at least one conformation that exhibits the claimed electrostatic energy. Again, the burden is shifted to the Applicants to provide evidence to the contrary, and to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02.

Fujita *et al.* teaches the polymerization of olefins using compounds of the invention. Therefore, it would have been obvious to one having ordinary skill in the art to use the compounds of the prior art in a similar fashion in order to arrive at a polymer as claimed in claim 1. Although the reference is silent with respect to the properties of the polymer, a reasonable basis exists to believe that the polymer possesses the requisite properties, especially in view of the fact that they are prepared by essentially the same transition metal catalysts. Furthermore, it is noted that the degree of polymerization may be manipulated by external variables such as reaction time, and this fact is well appreciated by those having skill in the art. Since the PTO does not perform experiments, the burden is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02.

29. Claims 1 and 26-31 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over EP 1,008,595 to Matsui *et al.*

The prior art of Matsui *et al.* claims compounds that are essentially the same as those described in the present claims, particularly compound (II-b) of present claim 29 (see claims of Matsui *et al.*). For the four compounds shown in row 5 on page 15, and the methoxy-, trifluoromethyl-, nitro-, and dichloro-substituted *N*-phenyl derivatives on page 16 satisfy the structural features recited in present claims 26-31.

satisfies claim 1 only

satisfies claim 29 and 30

The reference is silent with respect to any parameter determined by DFT calculations for any of the compounds described therein. However, since the structures of the prior art and those claimed are essentially the same, a reasonable basis exists to expect that DFT calculations of the prior art compounds yield similar results. Since the PTO can not perform experiments, the burden is shifted to the Applicants to establish an unobviousness difference. As further commentary, whereas calculations of this sort represent energy-minimized (*i.e.*, optimal), static geometries, they are merely man-made constructs, or best representations, of any real situation. Since all structures, in reality, are dynamic, a reasonable basis exists to believe that there exists some conformation in which the energetic parameters of the claims are met. Additionally, since the conformation of a structure can be manipulated using DFT programs, one is very likely to find at least one conformation that exhibits the claimed electrostatic energy. Again, the burden is shifted to the Applicants to provide evidence to the contrary, and to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02.

page 36 — C_{2-30} α-olefins ln 24
cycloolefins ln 27
dienes ln 41

Matsui *et al.* teaches the polymerization of olefins using compounds of the invention. Therefore, it would have been obvious to one having ordinary skill in the art to use the compounds of the prior art in a similar fashion in order to arrive at a polymer as claimed in claim 1. Although the reference is silent with respect to the properties of the polymer, a reasonable basis exists to believe that the polymer possesses the requisite properties, especially in view of the fact that they are prepared by essentially the same transition metal catalysts. Furthermore, it is noted that the degree of polymerization may be manipulated by external variables such as reaction time, and this fact is well appreciated by those having skill in the art. Since the PTO does not perform experiments, the burden is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02.

30. Claims 1 and 26-34 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 2000-119316 to Tsuru *et al.*

The prior art of Tsuru *et al.* claims compounds that are essentially the same as those described in the present claims, particularly compound (III) of present claim 32 (see claims of Matsui *et al.*). For compounds shown on pages 7 and 8 satisfy the structural limitations set forth in present claims 28 and 29. In particular, the 2,6-difluoro- (p. 7, row 1) the 2,6-*bis*(trifluoromethyl) (p. 7, row 5) and the 2-fluoro-6-trifluoromethyl (p. 8, row 2) *N*-phenyl derivatives satisfy the structural features recited in present claims 26-31.

The reference is silent with respect to any parameter determined by DFT calculations for any of the compounds described therein. However, since the structures of the prior art and those

4-perfluoroethyl and 3,5-bis(perfluoroethyl) (page 8, row 2)

claimed are essentially the same, a reasonable basis exists to expect that DFT calculations of the prior art compounds yield similar results. Since the PTO can not perform experiments, the burden is shifted to the Applicants to establish an unobviousness difference. As further commentary, whereas calculations of this sort represent energy-minimized (*i.e.*, optimal), static geometries, they are merely man-made constructs, or best representations, of any real situation. Since all structures, in reality, are dynamic, a reasonable basis exists to believe that there exists some conformation in which the energetic parameters of the claims are met. Additionally, since the conformation of a structure can be manipulated using DFT programs, one is very likely to find at least one conformation that exhibits the claimed electrostatic energy. Again, the burden is shifted to the Applicants to provide evidence to the contrary, and to establish an unobviousness difference.

Tsuru *et al.* teaches the polymerization of olefins using compounds of the invention. Therefore, it would have been obvious to one having ordinary skill in the art to use the compounds of the prior art in a similar fashion in order to arrive at a polymer as claimed in claim 1. Although the reference is silent with respect to the properties of the polymer, a reasonable basis exists to believe that the polymer possesses the requisite properties, especially in view of the fact that they are prepared by essentially the same transition metal catalysts. Furthermore, it is noted that the degree of polymerization may be manipulated by external variables such as reaction time, and this fact is well appreciated by those having skill in the art. Since the PTO does not perform experiments, the burden is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02.

Information Disclosure Statement

31. Several entries in the information disclosure statement of September 26, 2001 (Paper No. 4) were not considered because the foreign documents were not submitted.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (703)306-0094. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (703)308-2450. The fax phone number for the organization where this application or proceeding is assigned is (703)746-7064. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

ral
November 19, 2002

DAVID W. WU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700